(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property **Organization**

International Bureau



(43) International Publication Date 25 November 2004 (25.11.2004)

PCT

(10) International Publication Number WO 2004/103038 A1

- (51) International Patent Classification7: H05K 1/02, 7/20
- (21) International Application Number:

PCT/US2004/014209

(22) International Filing Date: 7 May 2004 (07.05.2004)

(25) Filing Language:

English

(26) Publication Language:

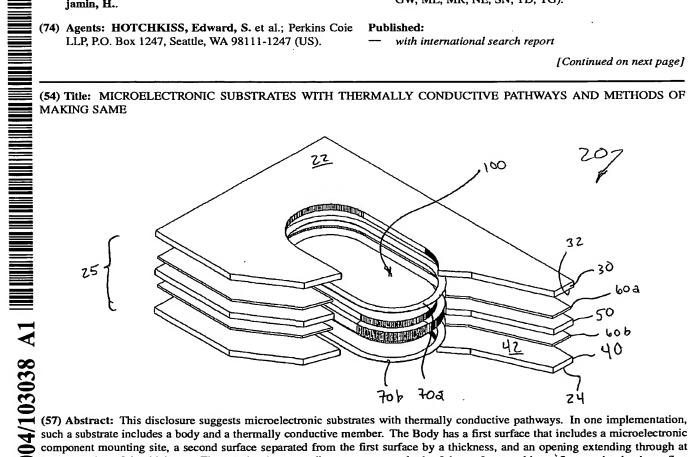
English

(30) Priority Data: 60/468,801

7 May 2003 (07.05.2003)

- (71) Applicant (for all designated States except US): MERIX CORPORATION [US/US]; 1521 Poplar Lane, Forest Grove, OR 97116 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): JOHNSON, Benjamin, H..

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).



such a substrate includes a body and a thermally conductive member. The Body has a first surface that includes a microelectronic component mounting site, a second surface separated from the first surface by a thickness, and an opening extending through at least a portion of the thickness. The opening is outwardly open at one or both of the surfaces and has a first portion having a first transverse dimension and a second portion having a larger second transverse dimension. The thermally conductive member includes a first thickness, which is received in the first portion of the opening, and a second thickness, which is received in the second portion of the opening. A transverse dimension of the second thickness of the thermally conductive member is greater than the first transverse dimension of the opening.



WO 2004/103038 A1



 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.